

REMARKS

Claims 60 and 63 are amended. Claims 53-59 and 65 are cancelled. New claims 68-70 are added. Claims 60-64 and 66-70 are pending in the application.

In response to the Examiner's request for restriction, Applicant acknowledges constructive election of Group II (claims 60-67). Claims 53-59 are cancelled accordingly.

The drawings stand objected to under 35 U.S.C. § 1.83(a) as failing to show every feature of the invention specified in the claims. The Examiner states that the recited wafer gap must be shown in the drawings or cancelled from the claims. Without admission as to the propriety of the Examiner's objection, claim 65 is cancelled.

Claim 63 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention at the time the application was filed. The Examiner states that the specification specifies mixing in liquid form prior to conversion to a gas phase mixture and does not support the recited gaseous H₂O₂ and gaseous silicon precursor combined prior to feeding. Without admission as to the propriety of the Examiner's rejection, claim 63 is amended to recite gaseous H₂O₂ and gaseous silicon precursor comprised by a gaseous mixture which is fed into the CVD reactor. Accordingly, applicant respectfully requests withdrawal of the § 112 rejection of claim 63 in the Examiner's next action.

Claims 60-67 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tsukune, U.S. Patent No. 5,314,724, or in the case of claim 64, under U.S.C. § 103(a) as being obvious over such reference. The Examiner is reminded by direction to MPEP

§ 2131 that anticipation requires disclosure of each and every element of a claim within a single prior art reference. The Examiner is further reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Pending claims 60-64 and 66-67 are allowable over Tsukune for at least the reason that Tsukune fails to disclose or suggest each and every limitation in any of those claims.

As amended independent claim 60 recites feeding a gaseous silicon precursor, feeding gaseous H_2O_2 into a chemical vapor deposition reactor, and utilizing the silicon precursor to deposit SiO_2 over a surface of the substrate to form a layer of SiO_2 . The amendment to claim 60 is for clarification purposes and is not intended to limit the scope of the claims. The amendment is supported by the specification at, for example, page 8, lines 6-9; page 9, lines 4-14; page 10, lines 21-22 and page 11, lines 18-20.

The Examiner indicates at page 4 of the present action that Tsukune discloses depositing a layer of SiO_2 over a surface of a substrate at a rate of 7000 Å per minute. Applicant notes that Tsukune distinctly discloses formation of a silicon oxide film by depositing a thin film of an organic-group-containing compound on a substrate and subsequently converting the film to a silicon oxide film (abstract; col. 1, ll. 51-65; col. 6, ll. 33-47; col. 9, ll. 22 through col. 10, ll. 32). Further, Tsukune indicates that the disclosed invention is directed towards providing a planarized insulation film and specifically indicates that direct deposition of SiO_2 results in cracking and prevents planarization (col. 4, ll. 42-52; col. 5, ll. 33-52 and col. 9, ll. 5-21). Tsukune indicates that the disclosed invention is aimed

at overcoming the problems encountered by direct deposition of SiO₂ films and therefore teaches away from the recited depositing SiO₂ over a surface of a substrate to form a layer of SiO₂. Accordingly, independent claim 60 is not anticipated by or rendered obvious by Tsukune and is allowable over this reference.

Dependent claims 61-64 and 66-70 are allowable over Tsukune for at least the reason that they depend from allowable base claim 60.

New claims 68-70 do not add "new matter" to the application since each is fully supported by the specification as originally filed. Claims 68 and 69 are supported by the specification at, for example, page 11, lines 1-16. New claim 70 is supported by the specification at, for example, page 10, lines 13-17 and page 12, lines 5-7. New claims 68-70 are allowable over Tsukune for at least the reason that they depend from allowable base claim 60.

For the reasons discussed above claims 60-64 and 66-70 are allowable. Accordingly, applicant respectfully requests formal allowance of pending claims 60-64 and 66-70 in the Examiner's next action.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING
RESPONSE TO NOVEMBER 4, 2002 FINAL OFFICE ACTION

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In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

Claims 53 – 59 are cancelled.

60. (Amended) A semiconductor processing method of depositing SiO₂ on a substrate comprising:

providing a substrate within a chemical vapor deposition reactor;
feeding a gaseous silicon precursor into the chemical vapor deposition reactor;
feeding gaseous H₂O₂ into the chemical vapor deposition reactor; and
utilizing the silicon precursor, depositing ~~a layer of~~ SiO₂ over a surface of the substrate at a rate of about 7000 Å per minute to form a layer of SiO₂.

63. (Amended) The semiconductor processing method of claim 60 wherein the gaseous H_2O_2 and the gaseous silicon precursor are ~~combined prior to feeding~~ comprised by a gaseous mixture which is fed into the chemical vapor deposition reactor.

65. (Cancelled).

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